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A FOCAL PLANE STELLAR X-RAY POLARIMETER FOR SXG

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Annual Report

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The Stellar X-Ray Polarimeter (SXP) is the only X-ray polarimeter designed to view astrophysical sources that is currently scheduled to be flown. The SXP is one of eight astronomical X-ray instruments that intended to be flown at the focal plane of the two SODART large-area metal-foil grazing-incidence X-ray telescopes on the Russian Spectrum-Roentgen-Gamma (SRG) mission. The engineering model of the SXP was delivered to Russia in February 1994. Construction of the flight model (FM) is complete. The SXP-FM is currently in storage at SAO and will be delivered when required.

Progress on the SRG mission is currently stalled due to lack of funding on the Russian side. The main activity during the past year was devoted towards a proposal, originating on the Russian side, in which the European Space Agency (ESA) would contribute funds sufficient for the completion of the SRG mission in exchange for observing time on the mission. In support of this effort, the SAO SXP team completed the following activities:

1. We prepared a report on the scientific motivation for the SXP, given the delayed launch date. Because the X-ray polarimetry science to be performed by the SXP is unique, the delayed launch has no significant impacts on the science. This report was very well received by the ESA science team evaluating the SRG mission.
2. We performed a test of the health of the SXP-FM. We removed the SXP-FM from storage, exercised all of the primary and backup systems including all four X-ray detectors, returned the FM to storage, and analyzed the test data. We found that all of the systems (both primary and backup) on the SXP-FM are in good working order.
3. Several of us attended a meeting at ESA headquarters at which the scientific justification, current status, and prospects for future funding of the SRG scientific instruments was reviewed. Dr. Kaaret presented the status of the SXP instrument including results of the health test described in (2). This meeting was also attended by Marc Allen of NASA-HQ, who spoke on the funding outlook for NASA participation in SRG.

Unfortunately, ESA decided against participation in the SRG program. Currently, the program continues with very limited funding on the Russian side. We continue to support Russian EM testing and programmatic activities.